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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/643,718

08/19/2003

Akio Kitamura

FUJI:213A

4675

7590

05/28/2004

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EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,718

Applicant(s)

KITAMURA, AKIO

Examiner

Howard Weiss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Attorney's Docket Number: FUJI:213A

Filing Date: 8/19/03

Continuing Data: Division of 10/085,632 (2/27/02 now U.S. Patent No. 6,639,287)

Claimed Foreign Priority Date: 2/27/01 (JPX)

Applicant(s): Kitamura

Examiner: Howard Weiss

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claims 10 to 17 recite the limitations 'first source, drain and channel regions' and 'second source, drain and channel regions'. There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 8 to 11, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner (U.S. Patent No. 5,885,874) and Osanai (U.S. Patent No. 6,653,694).

Gardner shows most aspects of the instant invention (e.g. Figures 1) including:

- forming a well region in a semiconductor substrate **102** of a first conductivity with a first region **106** and a second region **108**

- forming a gate insulating film **110**, gate electrodes **126, 128** and source/drain regions **150, 152, 154, 156** with LDD regions **132, 134, 136, 138**
- forming field oxide regions **104** separating said first and second regions (Column 10 Lines 12 to 14)
- implanting impurity ions **116,122** of the first conductivity type to form channel regions **140,142**
- states that the invention is used in microprocessors which can contain masked ROMs (Column 1 Lines 58 to 60) and that the dopants used can be either N or P (Column 10 Line 5 to 50).

Gardner does not show the implanting of second-conductivity type ions into the channel regions in the same ion implantation step. Osanai teaches (e.g. Figure 10) to implant ions of a second conductivity type into channel regions **102,103** in the same step to control the threshold voltage and, therefore, the corresponding threshold current (Column 7 Line 38 to Column 8 Line 12). It would have been obvious to a person of ordinary skill in the art at the time of invention to implant ions of a second conductivity type into channel regions in the same step as taught by Osanai in the process of Gardner to control the threshold voltage and, therefore, the corresponding threshold current.

5. Claims 12 to 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner and Osanai, as applied to Claim 8 above, and further in view of Oda et al. (U.S. Patent No. 6,469,347).

Gardner and Osanai show most aspects of the instant invention (Paragraph 4) except for the use of punch-through stopper regions and NMOS in P wells. Oda et al. teach (e.g. Figure 1) to use punch-through stopper regions **61,62** and NMOS in P wells **52** to achieve high performance (Column 2 Lines 58 to 65). It would have been obvious to a person of ordinary skill in the art at the time of invention to use punch-

through stopper regions and NMOS in P wells as taught by Oda et al. in the process of Gardner and Osanai to achieve high performance.

Response to Arguments

6. Applicant's arguments with respect to Claims 8 to 19 have been considered but are moot in view of the new ground(s) of rejection. The Applicant correctly noted that Claims 8 and 9, not 1 and 2, were the claims being rejected in the previous office action. This misprint was due to a typographical error.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 872-9306**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.

10. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 438/129, 228, 275	thru 5/26/04
Other Documentation: none	
Electronic Database(s): EAST	thru 5/26/04

HW/hw
26 May 2004



Howard Weiss
Examiner
Art Unit 2814